

Taxonomic Paper

A cybercatalogue of American sand fly types (Diptera, Psychodidae, Phlebotominae) deposited at the Natural History Museum, London

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Abstract

Background

Sand flies (Diptera, Psychodidae, Phlebotominae) are biting flies involved in the transmission of pathogens, including the protozoan parasite *Leishmania* amongst human and non-human animals (Rangel and Lainson 2009).

New information

A total of 60 species of American Phlebotominae (Diptera: Psychodidae), distributed amongst 16 genera were studied. A checklist of the primary and secondary type specimens held at the Natural History Museum, London (NHMUK), is given and 968 photographs of the specimens and their labels are made available on a Scratchpads website http://phlebotominaenhmtypes.myspecies.info.

Keywords

Taxonomy, Sand fly, Neotropical, Nearctic, Phlebotominae, type catalogue, NHMUK

Introduction

There are approximately 1,000 valid described species of sand flies in the world, of which 530 are known to occur in the Americas (Shimabukuro et al. 2017).

The aim of this work is to provide a checklist of Phlebotominae types of the Neotropical and Nearctic regions held in the collections of the Natural History Museum, London (NHMUK formerly BMNH), together with electronic links to, scans of whole slides, plus detail images of the taxonomically informative morphological structures. This work updates the American portion of the 1990 checklist of types deposited at the NHMUK (Townsend and Lane 1990).

History

Owing to the small size and morphological homogeneity of phlebotomine sand flies, few species were described before the turn of the 20th century. Indeed little progress in their taxonomy was made until Adler and Theodor (1926) and Theodor (1932) drew attention to the utility of various internal structures (cibarium & spermathecae) for species differentiation. Currently, taxonomically valid species descriptions of phlebotomine sand flies still rely on adult morphology. Although newer molecular techniques are increasingly used for identifying species (Zapata et al. 2012), they have yet to be formally used as characters in species descriptions. Type specimens are confined to the adult stage, with few taxa described in the immature stages.

Significant donations to the NHMUK collection have come from: (i) Graham Bell Fairchild who worked on the Panamanian fauna in the 1950s and 60s; (ii) a number of early types described by Robert Newstead in the 1920s when he was a Professor at the Liverpool School of Tropical Medicine; (iii) and most significantly, the collection of Oskar Theodor, which the museum purchased in 1981 after his retirement from the University of Jerusalem. The NHMUK has also absorbed the specimen collections of the London School of Tropical Medicine and Hygiene (LSHTM).

The main body of the NHMUK Phlebotominae collection was assembled by Dr D.J. Lewis who, though not a member of staff, was based at the museum for 30 years (1956-1986) whilst in the employ of the Medical Research Council in London. All his material was mounted in Berlese media which is not a permanent mountant. There are many examples of deteriorating Lewis slides in the NHMUK collection (Fig. 1), as well as instances where Lewis remounted other authors' type specimens into Berlese. His distinctive handwriting and messy slides, often bearing multiple specimens, are instantly recognisable.



Figure 1. doi

Example of an R. Newstead type remounted into Berlese by D. J. Lewis, showing the typical darkening of the mountant as it deteriorates.

Taxonomic treatment

Phlebotominae taxonomy has a long history of differences in opinion amongst experts and various conflicting classification schemes. The current situation is no exception, with both classification of Young and Duncan (1994), which is based on the previous work of Lewis et al. (1977) and that of Galati (2003b) in use at the same time, for the New World fauna. For a comparison of how these two classifications relate to each other see Fig. 2.

Currently, the NHMUK collections are arranged according to Young and Duncan (1994), but we have used the Galati (2003b) naming systems here to reflect the current knowledge of the group.

In their guide to identification and distribution, Young and Duncan (1994) adopt the classification of Lewis et al. (1977) with only minor changes. They make it clear that their arrangement of taxa does not represent a phylogenetic analysis of the group and, aside from a few comments in the notes, give no information on the relationships between their subgeneric groups. It is clear that their groupings have been arrived at through a phenetic review of morphological characters with little focus on identifying any common ancestry between groups.

Lewis et al. (1977) proposed their classification at a time when those working on sand flies were faced with the choice between two family names, several subfamily names and, for some species, three possible generic names. Their aim was to create a stable general framework with flexible subdivisions into which, recent and future ideas on the evolutionary relationships within the group, could be assimilated. They present a review of the early literature on the group and, with reference to the International Code of Zoological Nomenclature (ICZN), proposed the use of the family name Psychodidae Newman 1834 and the subfamily name Phlebotominae Rondani 1840, proposals that have been more or less universally accepted. Their proposal for the use of just five genera (*Brumptomyia*, *Lutzomyia*, *Phlebotomus*, *Sergentomyia* and *Warileya*) now seems less successful.

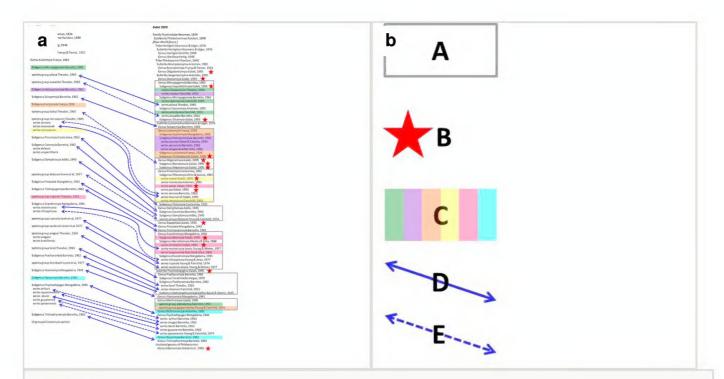


Figure 2.

Classifications of Phlebotominae proposed by Young and Duncan (1994) and Galati (2003b).

- a: Comparison of the two classifications. doi
- **b**: Explanation of the symbols used in Figure 2a. Grey boxes (**A**) on the Galati (2003b) classification indicate novel phylogenetic information provided by the classification of Galati. Aside from a few remarks given in the text, Young and Duncan (1994) give no information on the phylogenetic relationships between any of the sub-generic groups within their genus *Lutzomyia*. Red stars (**B**) indicate new sub-genera or genera in the Galati classification that do not exist in the Young and Duncan classification. Coloured highlighting (**C**) indicates groupings from Young and Duncan which are not recovered as monophyletic groups in the Galati classification. Solid blue arrows (**D**) indicate where exactly the same grouping is recovered in both classifications. Broken blue arrows (**E**) indicate where broadly the same grouping is recovered in both classifications with only very minor changes to the taxa included.

At that time, 1977, around 600 sand fly species had been described, with 290 of these in the American genus *Lutzomyia* (Young and Duncan 1994). The current checklist for American sand flies alone (Shimabukuro et al. 2017) stands at 530 and use of the Lewis et al. (1977) concept of the genus *Lutzomyia* would place 495 of these taxa into a single genus. It now seems likely that, by placing the emphasis on a stable and simple classification over one that best represented the evolutionary history of the group, Lewis et al. (1977) created a number of polyphyletic groups, particularly their genus *Lutzomyia*.

The classification of Galati (1995) and Galati (2003a) is more complex with the genus *Lutzomyia*, as defined in Lewis et al. (1977) and Young and Duncan (1994), split into 23 genera and 22 sub-generic groupings and has been increasingly utilised by authors working on the American fauna.

The study by Galati (1995) represented the first comprehensive attempt to perform a phylogenetic analysis of the American Phlebotominae, comprising a cladistic analysis of 88 adult morphology characters, using the Psychodidae subfamily Bruchomyiinae as the principal outgroup. The classification has since been updated and represents our current

best understanding of the evolutionary relationships within this important group (Galati 2003a, Galati 2003b).

There are some nomenclatural issues with the Galati classification as it stands at the present moment (see Shimabukuro et al. 2017). Within the classification a number of family group and genus group names are attributed to Artemiev from his 1991 work (Artemiev 1991). In this work, Artemiev does not accompany any of his new names with a description that states in words characters that are purported to differentiate the taxa, thus all his new names do not comply with ICZN Article 13.1.1 http://www.iczn.org/iczn/index.jsp and should be considered nomina nuda. Likewise, there are a large number of family group and genus group names in the classification attributed to Galati (1995), where she also fails to accompany any of her new names with a description that can be used to distinguish them. Galati lists the characters used, gives a polarised transformation series and maps the characters and taxa on to a cladogram, but this is not sufficient under the code to render the new names from her 1995 work available. In 2003, Galati updated her 1995 classification (Galati 2003b, Galati 2003a), this 2003 work contains extensive identification keys for all groups and any unavailable names should take authorship and date from this later act of establishment under ICZN articles 50 and 21.

Materials and methods

Checklist

The list contains information compiled from the examination of Nearctic and Neotropical species of sand flies from the Diptera Collection at the NHMUK.

Species are listed alphabetically, with genus and subgenus designations according to Shimabukuro et al. 2017. Links to the scratchpad entry and images for each specimen are given in the **eventRemarks** section of the checklist.

Readers familiar with the classification of Young and Duncan (1994) should refer to the scratchpads website http://phlebotominaenhmtypes.myspecies.info where the specimens have been arranged according to both classifications.

We have excluded from this catalogue two NHMUK specimens bearing "type" labels, for which we can find no record of the given species name in the literature. One labelled as the holotype of *Lutzomyia witremundoi* (author Feliciangeli), the other labelled as a paratype of *L. patiñoi* (authors Mangabeira & Galindo). It seems probable that these are unpublished manuscript names and are therefore unavailable under article 8 of the ICZN.

Specimen Images

Photographs were taken in the Sackler Biodiversity Imaging Laboratory (SBIL), at the NHMUK, with an Olympus BX63-CBH microscope equipped with a DP73 camera and

differential interference contrast (DIC) illumination. The images were edited in the Cellsens software and stacked images were produced by HeliconFocus 6 software.

Whole slide scans were generated using a SatScan instrument at x5 magnification and images were cropped and processed using the Inselect software, version 0.1.35, available from the Natural History Museum https://naturalhistorymuseum.github.io/inselect.

Data resources

Bibliography

Most of the original species descriptions are still under copyright to their original publisher. The bibliographical and historical database of scientific articles on leishmaniases and sand flies hosted by the Laboratoire de Parasitologie at the University of Montpellier is an extremely useful resource http://www.leishpub.univ-montp1.fr.

Specimen Images

The specimen images are available on the NHMUK data portal: https://doi.org/10.5519/0051226.

The checklist, specimen data and specimen images are available on a Scratchpads website http://phlebotominaenhmtypes.myspecies.info.

Checklist

acanthobasis Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus acanthobasis Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Materials

Paratypes:

- a. scientificName: Pressatia acanthobasis (Fairchild & Hertig, 1952); acceptedNameUsage: Pressatia camposi (Rodríguez, 1950); country: Panama; stateProvince: Colón; locality: Mojinga swamp; eventDate: 09-05-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/192; sex: Female; catalogNumber: BMNHE1722073; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Pressatia acanthobasis (Fairchild & Hertig, 1952); acceptedNameUsage: Pressatia camposi (Rodríguez, 1950); country: Panama; stateProvince: Panamá; locality: Rio Majé, Charco el Toro; eventDate: 03-22-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/193; sex: Male; catalogNumber: BMNHE1722074; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, Ecuador, Nicaragua, Panama

Notes: Synonym of *Pressatia camposi* (Rodríguez, 1950) Rodríguez 1950. Synonymised by Fairchild and Hertig 1958b.

aclydifera Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus aclydiferus Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Materials

Paratypes:

- a. scientificName: Psathyromyia (Xiphopsathyromyia) aclydifera (Fairchild & Hertig, 1952); country: Panama; stateProvince: Colón; locality: Mojinga swamp, nr. Gatún; eventDate: 08-21-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/111; sex: Female; catalogNumber: BMNHE1721992; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Psathyromyia (Xiphopsathyromyia) aclydifera (Fairchild & Hertig, 1952);
 country: Panama; stateProvince: Chiriquí; municipality: Barú; locality: Puerto Armuelles;
 eventDate: 06-09-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/112; sex: Male; catalogNumber: BMNHE1721993; institutionCode: NHMUK;
 basisOfRecord: Preserved Specimen

Distribution: Belize, Bolivia, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama

Notes: Valid species in *Psathyromyia* (*Xiphopsathyromyia*).

anduzei Rozeboom, 1942

Nomenclature:

Phlebotomus anduzei Rozeboom, 1942 (Rozeboom 1942)

Materials

Syntypes:

- a. scientificName: Nyssomyia anduzei (Rozeboom, 1942); country: Venezuela; stateProvince: Bolívar; municipality: Gran Sabana; locality: Gran Sabana; year: 1941; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/187; sex: Female; catalogNumber: BMNHE1722068; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Nyssomyia anduzei (Rozeboom, 1942); country: Venezuela;
 stateProvince: Bolívar; municipality: Gran Sobana; locality: Gran Sobana; year: 1941;
 month: 12; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/239;
 catalogNumber: BMNHE1722120; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Nyssomyia anduzei* (Rozeboom, 1942); country: Venezuela; stateProvince: Bolívar; municipality: Gran Sobana; locality: Gran Sobana; year: 1941; month: 12; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/240; sex:

Female; catalogNumber: BMNHE1722121; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

- d. scientificName: *Nyssomyia anduzei* (Rozeboom, 1942); country: Venezuela; stateProvince: Bolívar; municipality: Gran Sobana; locality: Gran Sobana; year: 1941; month: 12; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/241; sex: Female; catalogNumber: BMNHE1722122; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Nyssomyia anduzei* (Rozeboom, 1942); country: Venezuela; stateProvince: Bolívar; municipality: Gran Sobana; locality: Gran Sobana; year: 1941; month: 12; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/242; catalogNumber: BMNHE1722123; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, Costa Rica, French Guiana, Panama, Peru, Venezuela

Notes: Valid species in Nyssomyia.

aulari Feliciangeli, Ordoñez & Manzanilla, 1984

Nomenclature:

Lutzomyia aulari Feliciangeli, Ordoñez & Manzanilla, 1984 (Feliciangeli et al. 1984b)

Material

Holotype:

a. scientificName: Pintomyia (Pifanomyia) aulari (Feliciangeli, Ordoñez & Manzanilla, 1984); country: Venezuela; stateProvince: Trujillo; locality: Loma Abajo; eventDate: 06-01-70; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/207; sex: Male; catalogNumber: BMNHE1722088; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Venezuela

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

auraensis Mangabeira, 1942

Nomenclature:

Flebotomus auraensis Mangabeira, 1942 (Mangabeira 1942)

Material

Paratype:

a. scientificName: Trichophoromyia auraensis (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aurá, em buraco de tatu.; year: 1940; month: 8; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/200; sex: Male; catalogNumber: BMNHE1722081; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Peru, Surinam, Venezuela

Notes: Valid species in *Trichophoromyia*.

bispinosus Fairchild & Hertig, 1951

Nomenclature:

Phlebotomus bispinosus Fairchild & Hertig, 1951 (Fairchild and Hertig 1951a)

Materials

Paratype:

a. scientificName: Psychodopygus bispinosus (Fairchild & Hertig, 1951); country: Panama; stateProvince: Chiriquí; locality: La Victoria, Cerro Jefe; eventDate: 08-29-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/97; sex: Female; catalogNumber: BMNHE1251325; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Allotype:

a. scientificName: Psychodopygus bispinosus (Fairchild & Hertig, 1951); country: Panama; stateProvince: Chiriquí; locality: La Victoria, Cerro Jefe; eventDate: 08-30-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/98; sex: Male; catalogNumber: BMNHE1251326; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Guatemala, Honduras, Mexico, Nicaragua, Panama, Surinam

Notes: Valid species in *Psychodopygus*.

botella Fairchild & Hertig, 1961

Nomenclature:

Phlebotomus botellus Fairchild & Hertig, 1961 (Fairchild and Hertig 1961)

Material

Paratype:

a. scientificName: Lutzomyia (Helcocyrtomyia) botella (Fairchild & Hertig, 1961); country:
 Panama; stateProvince: Chiriquí; locality: El Volcan; eventDate: 03-23-54; eventRemarks:
 http://phlebotominaenhmtypes.myspecies.info/node/129; sex: Female; catalogNumber:
 BMNHE1722010; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Panama

Notes: Valid species in Lutzomyia (Helcocyrtomyia).

brumpti Larrousse, 1920

Nomenclature:

Phlebotomus brumpti Larrousse, 1920 (Larrousse 1920)

Materials

Syntypes:

- a. scientificName: Brumptomyia brumpti (Larrousse, 1920); country: Brazil; locality:
 Albuquerque; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/130;
 sex: Female; catalogNumber: BMNHE1722011; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: *Brumptomyia brumpti* (Larrousse, 1920); country: Brazil; locality: Albaquerque; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/162; sex: Male; catalogNumber: BMNHE1722043; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Argentina, Bolivia, Brazil

Notes: Valid species in Brumptomyia.

cayennensis braci Lewis, 1967

Nomenclature:

Lutzomyia cayennensis braci Lewis, 1967 (Lewis 1967)

Materials

Holotype:

a. scientificName: Micropygomyia (Micropygomyia) cayennensis braci (Lewis, 1967);
 country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate:
 12-18-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/147; sex:
 Male; catalogNumber: BMNHE1722028; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen

Paratypes:

- a. scientificName: Micropygomyia (Micropygomyia) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate: 18/12/64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/169; sex: Female; catalogNumber: BMNHE1722050; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Micropygomyia (Micropygomyia) cayennensis braci (Lewis, 1967);
 country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate: 18/12/64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/170; sex: Female; catalogNumber: BMNHE1722051; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Micropygomyia (Micropygomyia) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Stake Bay; eventDate: 12-16-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/225; sex: Female; catalogNumber: BMNHE1722106; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate: 12-18-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/226; sex:

- Male; catalogNumber: BMNHE1722107; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Stake Bay; eventDate: 12-16-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/227; sex: Male; catalogNumber: BMNHE1722108; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- f. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Stake Bay; eventDate: 12-16-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/228; sex: Male; catalogNumber: BMNHE1722109; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- g. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate: 12-18-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/229; sex: Female; catalogNumber: BMNHE1722110; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- h. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate: 12-18-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/230; sex: Male; catalogNumber: BMNHE1722111; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Micropygomyia (Micropygomyia) cayennensis braci (Lewis, 1967);
 country: Cayman Islands; stateProvince: Cayman Brac; locality: Stake Bay; eventDate:
 12-16-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/231; sex:
 Female; catalogNumber: BMNHE1722112; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen
- j. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis braci (Lewis, 1967); country: Cayman Islands; stateProvince: Cayman Brac; locality: Bamboo Bay; eventDate: 12-18-64; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/232; sex: Male; catalogNumber: BMNHE1722113; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Cayman Islands

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

cayennensis hispaniolae Fairchild & Trapido, 1950

Nomenclature:

Phlebotomus cayennensis hispaniolae Fairchild & Trapido, 1950 (Fairchild and Trapido 1950)

Materials

Paratypes:

a. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis hispaniolae (Fairchild & Trapido, 1950); country: Haiti; stateProvince: Nord; locality: La Voute, 4.8 miles from Cap-Haïtien on Limbe Rd.; eventDate: 06-09-49; eventRemarks: http://

- <u>phlebotominaenhmtypes.myspecies.info/node/148</u>; sex: Female; catalogNumber: BMNHE1722029; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Micropygomyia (Micropygomyia) cayennensis hispaniolae (Fairchild & Trapido, 1950); country: Haiti; stateProvince: Nord; municipality: le Cap-Haïtien; locality: Milot, le Cap-Haïtien; eventDate: 06-09-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/149; sex: Male; catalogNumber: BMNHE1722030; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis hispaniolae (Fairchild & Trapido, 1950); country: Dominican Republic; stateProvince: Hato Mayor; municipality: Sabana de la Mar; locality: Cacao plantation 6 km South of Sabana de la Mar; eventDate: 06-12-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/150; sex: Female; catalogNumber: BMNHE1722031; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis hispaniolae (Fairchild & Trapido, 1950); country: Haiti; stateProvince: Nord; municipality: le Cap-Haïtien; locality: Ruins of Pauline Bonaparte's palace East of town; eventDate: 06-09-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/151; sex: Female; catalogNumber: BMNHE1722032; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis hispaniolae (Fairchild & Trapido, 1950); country: Haiti; stateProvince: Nord; municipality: le Cap-Haïtien; locality: Ruins of Pauline Bonaparte's palace East of town; eventDate: 06-09-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/152; sex: Male; catalogNumber: BMNHE1722033; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- f. scientificName: *Micropygomyia* (*Micropygomyia*) cayennensis hispaniolae (Fairchild & Trapido, 1950); country: Dominican Republic; stateProvince: Santiago; locality: Santiago area; eventDate: 06-14-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/153; sex: Male; catalogNumber: BMNHE1722034; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Dominican Republic, Haiti

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

cayennensis jamaicensis Fairchild & Trapido, 1950

Nomenclature:

Phlebotomus cayennensis jamaicensis Fairchild & Trapido, 1950 (Fairchild and Trapido 1950)

Material

Paratype:

a. scientificName: Micropygomyia (Micropygomyia) cayennensis jamaicensis (Fairchild & Trapido, 1950); country: Jamaica; stateProvince: Kingston; locality: Rockfort, St Andrew parish, Kingston; eventDate: 05-20-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/156; sex: Male; catalogNumber: BMNHE1722037; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Jamaica

Notes: Valid species in Micropygomyia (Micropygomyia).

cayennensis maciasi Fairchild & Hertig, 1948

Nomenclature:

Phlebotomus cayennensis maciasi Fairchild & Hertig, 1948 (Fairchild and Hertig 1948)

Materials

Paratypes:

- a. scientificName: Micropygomyia (Micropygomyia) cayennensis maciasi (Fairchild & Hertig, 1948); country: Mexico; stateProvince: México; municipality: Zumpango; locality: Zumpango; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/154; sex: Female; catalogNumber: BMNHE1722035; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Micropygomyia (Micropygomyia) cayennensis maciasi (Fairchild & Hertig, 1948); country: Guatemala; stateProvince: Escuintla; municipality: San José; locality: San José; eventDate: 06-03-45; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/155; sex: Female; catalogNumber: BMNHE1722036; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Guatemala, Mexico

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

cayennensis puertoricensis Fairchild & Hertig, 1948

Nomenclature:

Phlebotomus cayennensis puertoricensis Fairchild & Hertig, 1948 (Fairchild and Hertig 1948)

Material

Paratype:

a. scientificName: Micropygomyia (Micropygomyia) cayennensis puertoricensis (Fairchild & Hertig, 1948); country: Puerto Rico; stateProvince: Lares; locality: Lares; eventDate: 07-03-47; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/159; sex: Female; catalogNumber: BMNHE1722040; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Puerto Rico

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

coutinhoi Mangabeira, 1942

Nomenclature:

Flebotomus coutinhoi Mangabeira, 1942 (Mangabeira 1942)

Material

Paratype:

a. scientificName: Psathyromyia (Forattiniella) coutinhoi (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Asura; year: 1940; month: 8; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/104; sex: Male; catalogNumber: BMNHE1721985; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Peru

Notes: Valid species in Psathyromyia (Forattiniella).

cubensis Fairchild & Trapido, 1950

Nomenclature:

Phlebotomus cubensis Fairchild & Trapido, 1950 (Fairchild and Trapido 1950)

Materials

Paratypes:

- a. scientificName: Micropygomyia (Micropygomyia) cubensis (Fairchild & Trapido, 1950); country: Cuba; stateProvince: Camagüey; locality: Camagüey; eventDate: 05-30-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/160; sex: Female; catalogNumber: BMNHE1722041; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Micropygomyia (Micropygomyia) cubensis (Fairchild & Trapido, 1950);
 country: Cuba; stateProvince: Pinar del Río; municipality: Viñales; locality: San Vincente,
 Viñales; eventDate: 06-04-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/161; sex: Male; catalogNumber:
 BMNHE1722042; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Micropygomyia (Micropygomyia) cubensis (Fairchild & Trapido, 1950); country: Cuba; stateProvince: Camagüey; locality: spelling on slide "Camaguay"; eventDate: 05-30-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/233; sex: Female; catalogNumber: BMNHE1722114; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Micropygomyia (Micropygomyia) cubensis (Fairchild & Trapido, 1950); country: Cuba; stateProvince: Matanzas; locality: Ceiba Mocha; eventDate: 06-02-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/234; catalogNumber: BMNHE1722115; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Micropygomyia* (*Micropygomyia*) cubensis (Fairchild & Trapido, 1950); country: Cuba; stateProvince: Camagüey; locality: spelling on slide "Camaguay"; eventDate: 05-30-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/235; sex: Male; catalogNumber: BMNHE1722116; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Cuba, United States of America

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

dasymera Fairchild & Hertig, 1961

Nomenclature:

Phlebotomus dasymerus Fairchild & Hertig, 1961 (Fairchild and Hertig 1961)

Materials

Paratypes:

- a. scientificName: *Psathyromyia* (*Psathyromyia*) dasymera (Fairchild & Hertig, 1961); country: Panama; stateProvince: Colón; locality: Juan Mina; eventDate: 11-29-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/93; sex: Male; catalogNumber: BMNHE1251321; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Psathyromyia (Psathyromyia) dasymera (Fairchild & Hertig, 1961);
 country: Panama; stateProvince: Panamá; locality: Rio Majé, Charco el Toro; eventDate:
 03-22-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/94; sex:
 Male; catalogNumber: BMNHE1251322; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen
- c. scientificName: *Psathyromyia* (*Psathyromyia*) dasymera (Fairchild & Hertig, 1961); country: Panama; locality: Canal zone, Camp Piña; eventDate: 03-06-54; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/95; sex: Female; catalogNumber: BMNHE1251323; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Psathyromyia (Psathyromyia) dasymera (Fairchild & Hertig, 1961); country: Panama; stateProvince: Colón; locality: Mojinga swamp; eventDate: 07-24-54; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/96; sex: Female; catalogNumber: BMNHE1251324; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Brazil, Colombia, Costa Rica, Ecuador, Mexico, Nicaragua, Panama, Venezuela

Notes: Valid species in *Psathyromyia* (*Psathyromyia*).

del-pozoi Vargas & Díaz-Nájera, 1953

Nomenclature:

Phlebotomus del-pozoi Vargas & Díaz-Nájera, 1953 (Vargas and Díaz Nájera 1953)

Materials

Paratypes:

- a. scientificName: Dampfomyia delpozoi (Vargas & Díaz-Nájera, 1953); country: Mexico; stateProvince: Chiapas; locality: Finca El Vergel; eventDate: 05-28-35; eventRemarks: https://phlebotominaenhmtypes.myspecies.info/node/261; sex: Female; catalogNumber: BMNHE1722142; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Dampfomyia delpozoi (Vargas & Díaz-Nájera, 1953); country: Mexico; stateProvince: Chiapas; locality: Finca El Vergel; eventDate: 05-28-35; eventRemarks: https://phlebotominaenhmtypes.myspecies.info/node/262; sex: Female; catalogNumber: BMNHE1722143; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Guatemala, Mexico

Notes: Valid species in *Dampfomyia*.

duppyorum Fairchild & Trapido, 1950

Nomenclature:

Phlebotomus duppyorum Fairchild & Trapido, 1950 (Fairchild and Trapido 1950)

Materials

Paratypes:

- a. scientificName: Micropygomyia (Micropygomyia) duppyorum (Fairchild & Trapido, 1950); country: Jamaica; stateProvince: Manchester; locality: Melrose Hill, nr. Williams Field; eventDate: 05-25-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/189; sex: Female; catalogNumber: BMNHE1722070; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Micropygomyia (Micropygomyia) duppyorum (Fairchild & Trapido, 1950);
 country: Jamaica; stateProvince: Manchester; locality: Melrose Hill, nr. Williams Field;
 eventDate: 05-25-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/190; sex: Male; catalogNumber: BMNHE1722071; institutionCode: NHMUK;
 basisOfRecord: Preserved Specimen
- c. scientificName: *Micropygomyia* (*Micropygomyia*) *duppyorum* (Fairchild & Trapido, 1950); country: Jamaica; stateProvince: Manchester; locality: Melrose Hill, nr. Williams Field.; eventDate: 05-25-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/236; sex: Female; catalogNumber: BMNHE1722117; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Micropygomyia (Micropygomyia) duppyorum (Fairchild & Trapido, 1950); country: Jamaica; stateProvince: Saint Catherine; locality: nr. Springvale; eventDate: 05-21-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/237; sex: Male; catalogNumber: BMNHE1722118; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Micropygomyia* (*Micropygomyia*) duppyorum (Fairchild & Trapido, 1950); country: Jamaica; stateProvince: Manchester; locality: Manchester area; eventDate: 05-25-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/238; catalogNumber: BMNHE1722119; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Jamaica

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

dysponeta Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus dysponeta Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Materials

Paratypes:

- a. scientificName: Pressatia dysponeta (Fairchild & Hertig, 1952); country: Panama; stateProvince: Panamá; locality: Pacora; eventDate: 08-13-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/194; sex: Female; catalogNumber: BMNHE1722075; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Pressatia dysponeta (Fairchild & Hertig, 1952); country: Panama; stateProvince: Panamá; locality: Pacora; eventDate: 08-13-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/195; sex: Male; catalogNumber: BMNHE1722076; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, Colombia, Costa Rica, Ecuador, Panama, Venezuela

Notes: Valid species in Pressatia.

evansi Nuñez-Tovar, 1924

Nomenclature:

Phlebotomus evansi Nuñez-Tovar, 1924 (Nuñez-Tovar 1924)

Materials

Syntypes:

- a. scientificName: Pintomyia (Pifanomyia) evansi (Nuñez-Tovar, 1924); country: Venezuela; year: 1922; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/208; sex: Male; catalogNumber: BMNHE1722089; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Pintomyia (Pifanomyia) evansi (Nuñez-Tovar, 1924); country: Venezuela; year: 1922; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/210; sex: Male; catalogNumber: BMNHE1722091; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Peru, Venezuela

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

flochi Abonnenc & Chassignet, 1948

Nomenclature:

Phlebotomus flochi Abonnenc & Chassignet, 1948 (Abonnenc and Chassignet 1948)

Material

Holotype:

a. scientificName: *Trichophoromyia flochi* (Abonnenc & Chassignet, 1948); country: French Guiana; locality: Baduel; year: 1947; month: 12; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/257; sex: Male; catalogNumber: BMNHE1722138; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, French Guiana

Notes: Valid species in *Trichophoromyia*.

gasti Sherlock, 1962

Nomenclature:

Phlebotomus gasti Sherlock, 1962 (Sherlock 1962)

Materials

Paratypes:

- a. scientificName: Evandromyia (Aldamyia) gasti (Sherlock, 1962); acceptedNameUsage: Evandromyia (Aldamyia) walkeri (Newstead, 1914); country: Colombia; stateProvince: Santander; municipality: San Vicente de Chucurí; locality: Soledad, San Vicente de Chucurí; eventDate: 08-16-74; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/215; sex: Male; catalogNumber: BMNHE1722096; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Evandromyia (Aldamyia) gasti (Sherlock, 1962); acceptedNameUsage: Evandromyia (Aldamyia) walkeri (Newstead, 1914); country: Colombia; stateProvince: Santander; municipality: San Vicente de Chucurí; locality: Soledad, San Vicente de Chucurí; eventDate: 16/08/44; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/216; sex: Male; catalogNumber: BMNHE1722097; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Ecuador, French Guiana, Panama, Peru, Trinidad and Tobago, Venezuela

Notes: Synonym of *Evandromyia* (*Aldamyia*) *walkeri* (Newstead, 1914). Synonymised by Young 1979.

gonzaloi Ogusuku, Canales & Pérez, 1997

Nomenclature:

Lutzomyia gonzaloi Ogusuku, Canales & Pérez, 1997 (Ogusuku et al. 1997)

Materials

Paratypes:

- a. scientificName: Lutzomyia (Helcocyrtomyia) gonzaloi Ogusuku, Canales & Pérez, 1997; country: Peru; stateProvince: Huánuco; municipality: Huamalíes; locality: Monzon, Paucacu; eventDate: 05-22-97; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/131; sex: Male; catalogNumber: BMNHE1722012; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Lutzomyia (Helcocyrtomyia) gonzaloi Ogusuku, Canales & Pérez, 1998; country: Peru; stateProvince: Huánuco; municipality: Huamalíes; locality: Monzon, Paucacu; eventDate: 05-22-97; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/132; sex: Female; catalogNumber: BMNHE1722013; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Peru

Notes: Valid species in *Lutzomyia* (*Helcocyrtomyia*).

hansoni Fairchild & Hertig, 1961

Nomenclature:

Phlebotomus hansoni Fairchild & Hertig, 1961 (Fairchild and Hertig 1961)

Materials

Paratypes:

- a. scientificName: Migonemyia (Blancasmyia) hansoni (Fairchild & Hertig, 1961); acceptedNameUsage: Migonemyia (Blancasmyia) gorbitzi (Blancas, 1960); country: Panama; stateProvince: Bocas del Toro; locality: Almirante; eventDate: 06-19-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/116; sex: Female; catalogNumber: BMNHE1721997; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Migonemyia (Blancasmyia) hansoni (Fairchild & Hertig, 1961);
 acceptedNameUsage: Migonemyia (Blancasmyia) gorbitzi (Blancas, 1960); country:
 Panama; stateProvince: Bocas del Toro; locality: Almirante; eventDate: 06-19-51;
 eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/117; sex: Female;
 catalogNumber: BMNHE1721998; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, Ecuador, Panama, Peru

Notes: Synonym of *Migonemyia* (*Blancasmyia*) *gorbitzi* (Blancas, 1959) Blancas 1959. Synonymised by Christensen and Rutledge 1973.

hartmanni Fairchild & Hertig, 1957

Nomenclature:

Phlebotomus hartmanni Fairchild & Hertig, 1957 (Fairchild and Hertig 1957)

Materials

Paratypes:

- a. scientificName: Lutzomyia (Helcocyrtomyia) hartmanni (Fairchild & Hertig, 1957); country:
 Panama; locality: Cerro Campana; eventDate: 04-24-52; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/126; sex: Male; catalogNumber:
 BMNHE1722007; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Lutzomyia (Helcocyrtomyia) hartmanni (Fairchild & Hertig, 1957); country: Panama; locality: Cerro Campana; eventDate: 02-10-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/127; sex: Female; catalogNumber: BMNHE1722008; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, Ecuador, Mexico, Panama, Peru

Notes: Valid species in *Lutzomyia* (*Helcocyrtomyia*).

inpai Young & Arias, 1977

Nomenclature:

Lutzomyia inpai Young & Arias, 1977 (Young and Arias 1977)

Materials

Paratypes:

a. scientificName: Evandromyia (Evandromyia) inpai (Young & Arias, 1977); country: Brazil; stateProvince: Amazonas State; locality: Manaus, Estrada Torquato Tapajos, km 54 (east of Manaus); eventDate: 10-21-75; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/113; sex: Female; catalogNumber: BMNHE1721994; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

b. scientificName: Evandromyia (Evandromyia) inpai (Young & Arias, 1977); country: Brazil; stateProvince: Amazonas State; locality: Manaus, Estrada Torquato Tapajos, km 54 (east of Manaus); eventDate: 10-21-75; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/114; sex: Male; catalogNumber: BMNHE1721995; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, Venezuela

Notes: Valid species in Evandromyia (Evandromyia).

isovespertilionis Fairchild & Hertig, 1958

Nomenclature:

Phlebotomus isovespertilionis Fairchild & Hertig, 1958 (Fairchild and Hertig 1958a)

Materials

Paratypes:

- a. scientificName: Dampfomyia (Coromyia) isovespertilionis (Fairchild & Hertig, 1958);
 country: Panama; eventDate: 06-20-56; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/105; sex: Male; catalogNumber:
 BMNHE1721986; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Dampfomyia (Coromyia) isovespertilionis (Fairchild & Hertig, 1958);
 country: Panama; eventDate: 06-20-56; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/106; sex: Male; catalogNumber:
 BMNHE1721987; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Dampfomyia (Coromyia) isovespertilionis (Fairchild & Hertig, 1958); country: Panama; eventDate: 06-20-56; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/107; sex: Male; catalogNumber: BMNHE1721988; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Dampfomyia (Coromyia) isovespertilionis (Fairchild & Hertig, 1958);
 country: Panama; eventDate: 06-20-56; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/108; sex: Male; catalogNumber:
 BMNHE1721989; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Dampfomyia* (*Coromyia*) *isovespertilionis* (Fairchild & Hertig, 1958); country: Panama; eventDate: 06-20-56; eventRemarks: http://

<u>phlebotominaenhmtypes.myspecies.info/node/109</u>; sex: Male; catalogNumber:
BMNHE1721990; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

f. scientificName: Dampfomyia (Coromyia) isovespertilionis (Fairchild & Hertig, 1958); country: Panama; locality: K-19; eventDate: 07-24-56; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/166; sex: Male; catalogNumber: BMNHE1722047; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, Panama

Notes: Valid species in *Dampfomyia* (*Coromyia*).

lainsoni Fraiha & Ward, 1974

Nomenclature:

Psychodopygus lainsoni Fraiha & Ward, 1974 (Fraiha and Ward 1974)

Materials

Paratypes:

- a. scientificName: Psychodopygus lainsoni (Fraiha & Ward, 1974); country: Brazil; stateProvince: Pará; locality: km 46 Altamira to Itaituba road, Transamazonia highway; eventDate: 08-21-71; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/196; sex: Female; catalogNumber: BMNHE1722077; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Psychodopygus lainsoni (Fraiha & Ward, 1974); country: Brazil; stateProvince: Pará; locality: km 46 Altamira to Itaituba road, Transamazonia highway; year: 1971; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/197; sex: Male; catalogNumber: BMNHE1722078; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Psychodopygus lainsoni* (Fraiha & Ward, 1974); country: Brazil; stateProvince: Pará; locality: km 46 Altamira to Itaituba road, Transamazonia highway; eventDate: 08-21-71; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/198; sex: Female; catalogNumber: BMNHE1722079; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Psychodopygus lainsoni (Fraiha & Ward, 1974); country: Brazil; stateProvince: Pará; locality: km 46 Altamira to Itaituba road, Transamazonia highway; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/199; sex: Male; catalogNumber: BMNHE1722080; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Peru

Notes: Valid species in *Psychodopygus*.

lewisi Feliciangeli, Ordoñez & Fernández, 1984

Nomenclature:

Lutzomyia lewisi Feliciangeli, Ordoñez & Fernández, 1984 (Feliciangeli et al. 1984a)

Material

Holotype:

a. scientificName: Micropygomyia (Micropygomyia) lewisi (Feliciangeli, Ordoñez & Fernández, 1984); country: Venezuela; stateProvince: Cojedes; locality: La Vāquira; eventDate: 06-20-77; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/103; sex: Female; catalogNumber: BMNHE1721984; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Venezuela

Notes: Valid species in *Micropygomyia* (*Micropygomyia*).

lumbrerasi Ogosuku, Perez, Davies & Villaseca, 1996

Nomenclature:

Warileya lumbrerasi Ogosuku, Perez, Davies & Villaseca, 1996 (Ogusuku et al. 1996)

Materials

Paratypes:

- a. scientificName: Warileya lumbrerasi Ogosuku, Perez, Davies & Villaseca, 1996; country:
 Peru; stateProvince: Piura; municipality: Huancabamba; locality: El Higueron; eventDate:
 02-21-93; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/99; sex:
 Female; catalogNumber: BMNHE1721980; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen
- scientificName: Warileya lumbrerasi Ogosuku, Perez, Davies & Villaseca, 1996; country:
 Peru; stateProvince: Piura; municipality: Huancabamba; locality: El Higueron; eventDate:
 05-23-92; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/100; sex:
 Male; catalogNumber: BMNHE1721981; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen

Distribution: Peru

Notes: Valid species in Warileya.

monzonensis Ogusuku, Canales & Pérez, 1997

Nomenclature:

Lutzomyia monzonensis Ogusuku, Canales & Pérez, 1997 (Ogusuku et al. 1997)

Materials

Paratypes:

a. scientificName: Lutzomyia (Helcocyrtomyia) monzonensis Ogusuku, Canales & Pérez, 1997; country: Peru; stateProvince: Huánuco; municipality: Huamalíes; locality: Monzon, Paucacu; eventDate: 05-22-97; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/133; sex: Female; catalogNumber: BMNHE1722014; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

scientificName: Lutzomyia (Helcocyrtomyia) monzonensis Ogusuku, Canales & Pérez, 1998; country: Peru; stateProvince: Huánuco; municipality: Huamalíes; locality: Monzon, Paucacu; eventDate: 05-22-97; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/145; sex: Male; catalogNumber: BMNHE1722026; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Peru

Notes: Valid species in *Lutzomyia* (*Helcocyrtomyia*).

odax Fairchild & Hertig, 1961

Nomenclature:

Phlebotomus odax Fairchild & Hertig, 1961 (Fairchild and Hertig 1961)

Materials

Paratypes:

- a. scientificName: Pintomyia (Pifanomyia) odax (Fairchild & Hertig, 1961); country: Honduras; stateProvince: Atlántida; municipality: Tela; locality: Lancetilla Valley, Tela; eventDate: 06/01/54; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/171; sex: Female; catalogNumber: BMNHE1722052; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Pintomyia (Pifanomyia) odax (Fairchild & Hertig, 1961); country: Panama; stateProvince: Bocas del Toro; locality: Finca Nievecita, Almirante; eventDate: 17/06/50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/173; sex: Male; catalogNumber: BMNHE1722054; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Pintomyia* (*Pifanomyia*) *odax* (Fairchild & Hertig, 1961); country: Honduras; stateProvince: Atlántida; municipality: Tela; locality: Lancetilla Valley, Tela; eventDate: 23/12/53; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/174; sex: Female; catalogNumber: BMNHE1722055; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, Costa Rica, French Guiana, Guatemala, Honduras, Nicaragua, Panama, Venezuela

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

oligodonta Young, Pérez & Romero, 1985

Nomenclature:

Lutzomyia oligodonta Young, Pérez & Romero, 1985 (Young et al. 1985)

Material

Paratype:

a. scientificName: Oligodontomyia oligodonta (Young, Pérez & Romero, 1985); country:
 Peru; stateProvince: Lima; locality: Cocachacra; eventDate: 01/05/63; eventRemarks: <a href="https://html.ncbi.nlm.nc

<u>p://phlebotominaenhmtypes.myspecies.info/node/217</u>; sex: Male; catalogNumber: BMNHE1722098; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Peru

Notes: Valid species in Oligodontomyia.

olmeca novica Young & Arias, 1982

Nomenclature:

Lutzomyia olmeca novica Young & Arias, 1982 (Young and Arias 1982)

Materials

Paratypes:

- a. scientificName: Bichromomyia olmeca novica (Young & Arias, 1982); country: Brazil; stateProvince: Amazonas; locality: 43km NE Manaus, at Campinas; eventDate: 03-21-79; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/185; sex: Female; catalogNumber: BMNHE1722066; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Bichromomyia olmeca novica (Young & Arias, 1982); country: Brazil; stateProvince: Amazonas; locality: 25km E of Manaus, Ducke Reserve; eventDate: 16-19/03/1979; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/186; sex: Male; catalogNumber: BMNHE1722067; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, Peru

Notes: Valid species in *Bichromomyia*.

olmeca olmeca Vargas & Díaz-Nájera, 1959

Nomenclature:

Phlebotomus olmecus Vargas & Díaz-Nájera, 1959 (Vargas and Díaz Nájera 1959)

Material

Allotype:

a. scientificName: Bichromomyia olmeca olmeca (Vargas & Díaz-Nájera, 1959); country: Mexico; stateProvince: Tabasco; municipality: Teapa; locality: Sta A-0; eventDate: 12-16-53; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/91; sex: Female; catalogNumber: BMNHE1251319; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Costa Rica, Guatemala, Honduras, Mexico, Nicaragua

Notes: Valid species in Bichromomyia.

oresbia (Fairchild & Hertig, 1961)

Nomenclature:

Phlebotomus oresbia Fairchild & Hertig, 1961 (Fairchild and Hertig 1961)

Material

Paratype:

a. scientificName: Pintomyia (Pifanomyia) oresbia (Fairchild & Hertig, 1961); country: Panama; stateProvince: Chiriquí; municipality: Renacimiento; locality: Rio Candela, Chiriquí; eventDate: 11/08/51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/172; sex: Female; catalogNumber: BMNHE1722053; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Costa Rica, Panama

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

peruensis Shannon, 1929

Nomenclature:

Phlebotomus peruensis Shannon, 1929 (Shannon 1929)

Material

Syntype:

a. scientificName: Lutzomyia (Helcocyrtomyia) peruensis (Shannon, 1929); country: Peru; stateProvince: Lima; locality: Matucana; eventDate: 06-19-28; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/258; sex: Male; catalogNumber: BMNHE1722139; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Peru

Notes: Valid species in *Lutzomyia* (*Helcocyrtomyia*).

phlebotomanica Hertig, 1948

Nomenclature:

Warileya phlebotomanica Hertig, 1948 (Hertig 1948)

Materials

Paratypes:

- a. scientificName: Warileya phlebotomanica Hertig, 1948; country: Peru; stateProvince: Lima; municipality: Huarochiri; locality: Acequia cueva, Matucana; eventDate: 08-25-45; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/163; sex: Female; catalogNumber: BMNHE1722044; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: *Warileya phlebotomanica* Hertig, 1949; country: Peru; stateProvince: Lima; municipality: Huarochiri; locality: Rio Rimac, Matucana; month: 8; day: 23;

eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/164; sex: Female; catalogNumber: BMNHE1722045; institutionCode: NHMUK; basisOfRecord: Preserved

Specimen

Distribution: Ecuador, Peru

Notes: Valid species in Warileya.

pia Fairchild & Hertig, 1961

Nomenclature:

Phlebotomus pius Fairchild & Hertig, 1961 (Fairchild and Hertig 1961)

Materials

Paratypes:

- a. scientificName: Pintomyia (Pifanomyia) pia (Fairchild & Hertig, 1961); country: Panama; stateProvince: Chiriqui; locality: Lagunas del Volcán; eventDate: 05-19-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/222; sex: Male; catalogNumber: BMNHE1722103; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Pintomyia (Pifanomyia) pia (Fairchild & Hertig, 1961); country: Panama; stateProvince: Chiriqui; locality: Sta. Clara, El Volcan; eventDate: 08-11-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/223; sex: Male; catalogNumber: BMNHE1722104; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Colombia, Costa Rica, Panama, Peru, Venezuela

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

pinottii Damasceno & Arouck, 1956

Nomenclature:

Flebotomus pinottii Damasceno & Arouck, 1956 (Damasceno and Arouck 1956)

Material

Paratype:

a. scientificName: Evandromyia (Evandromyia) pinottii (Damasceno & Arouck, 1956);
 country: Brazil; locality: Rio Acará; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/115; sex: Male; catalogNumber:
 BMNHE1721996; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, French Guiana, Venezuela

Notes: Valid species in *Evandromyia* (*Evandromyia*).

quasitownsendi Osorno, Osorno-Mesa & Morales, 1972

Nomenclature:

Lutzomyia quasitownsendi Osorno, Osorno-Mesa & Morales, 1972 (Osorno et al. 1972)

Materials

Paratypes:

- a. scientificName: Pintomyia (Pifanomyia) quasitownsendi (Osorno, Osorno-Mesa & Morales, 1972); country: Colombia; stateProvince: Santander; municipality: Socorro; eventDate: 12-09-67; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/211; sex: Male; catalogNumber: BMNHE1722092; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Pintomyia (Pifanomyia) quasitownsendi (Osorno, Osorno-Mesa & Morales, 1972); country: Colombia; stateProvince: Santander; municipality: Barbosa; eventDate: 10-30-68; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/212; sex: Female; catalogNumber: BMNHE1722093; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Pintomyia* (*Pifanomyia*) *quasitownsendi* (Osorno, Osorno-Mesa & Morales, 1972); country: Colombia; stateProvince: Santander; municipality: Barbosa; eventDate: 10-30-68; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/248; sex: Female; catalogNumber: BMNHE1722129; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Pintomyia (Pifanomyia) quasitownsendi (Osorno, Osorno-Mesa & Morales, 1972); country: Colombia; stateProvince: Santander; municipality: Güepsa; eventDate: 06-22-67; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/249; sex: Female; catalogNumber: BMNHE1722130; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

richardwardi Ready & Fraiha, 1981

Nomenclature:

Lutzomyia richardwardi Ready & Fraiha, 1981 (Ready and Fraiha 1981)

Materials

Paratypes:

- a. scientificName: *Nyssomyia richardwardi* (Ready & Fraiha, 1981); country: Brazil; stateProvince: Pará; locality: Altamira-Itaituba rd km 43; eventDate: 08-21-71; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/92; sex: Female; catalogNumber: BMNHE1251320; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: *Nyssomyia richardwardi* (Ready & Fraiha, 1981); country: Brazil; stateProvince: Pará; locality: km 43 Altamira to Itaituba rd; eventDate: 08-21-71; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/182; sex: Female;

catalogNumber: BMNHE1722063; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

c. scientificName: *Nyssomyia richardwardi* (Ready & Fraiha, 1981); country: Brazil; stateProvince: Pará; locality: km 43 Altamira to Itaituba rd; eventDate: 08-21-71; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/183; sex: Female; catalogNumber: BMNHE1722064; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Ecuador, Peru

Notes: Valid species in Nyssomyia.

rosabali Fairchild & Hertig, 1956

Nomenclature:

Phlebotomus rosabali Fairchild & Hertig, 1956 (Fairchild and Hertig 1956)

Materials

Paratypes:

a. scientificName: Dampfomyia (Dampfomyia) rosabali (Fairchild & Hertig, 1956); country:
 Costa Rica; stateProvince: Puntarenas; locality: Barranca, Finca Socorrito; eventDate:
 12-17-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/110; sex:
 Female; catalogNumber: BMNHE1721991; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen

b. scientificName: *Dampfomyia* (*Dampfomyia*) *rosabali* (Fairchild & Hertig, 1956); country: Colombia; stateProvince: Cauca; municipality: Bolívar; locality: Bolívar (Cauca); eventDate: 23/01/44; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/167; sex: Male; catalogNumber: BMNHE1722048; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, Panama

Notes: Valid species in *Dampfomyia* (*Dampfomyia*).

rostrans Summers, 1912

Nomenclature:

Phlebotomus rostrans Summers, 1912 (Summers 1912)

Materials

Paralectotypes:

- a. scientificName: *Trichophoromyia rostrans* (Summers, 1912); locality: Rio Javari, Peru/Brazil border; year: 1912; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/201; sex: Male; catalogNumber: BMNHE1722082; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: *Trichophoromyia rostrans* (Summers, 1912); locality: Rio Javari, Peru/Brazil border; year: 1912; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/

<u>node/202</u>; sex: Female; catalogNumber: BMNHE1722083; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

c. scientificName: *Trichophoromyia rostrans* (Summers, 1912); locality: Rio Javari, Peru/Brazil border; year: 1912; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/243; sex: Female; catalogNumber: BMNHE1722124; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Lectotype:

a. scientificName: *Trichophoromyia rostrans* (Summers, 1912); locality: Rio Javari, Peru/Brazil border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/244; sex: Female; catalogNumber: BMNHE1722125; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil

Notes: Valid species in *Trichophoromyia*. Lectotype designated by Lewis 1967b.

rotundipennis Fairchild & Hertig, 1951

Nomenclature:

Warileya rotundipennis Fairchild & Hertig, 1951 (Fairchild and Hertig 1951b)

Materials

Paratypes:

- a. scientificName: Warileya rotundipennis Fairchild & Hertig, 1951; country: Panama; locality: Cerro Campana; eventDate: 08-24-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/101; sex: Female; catalogNumber: BMNHE1721982; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Warileya rotundipennis Fairchild & Hertig, 1951; country: Panama; locality: Cerro Campana; eventDate: 08-24-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/102; sex: Male; catalogNumber: BMNHE1721983; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Warileya rotundipennis Fairchild & Hertig, 1953; country: Panama; locality: Cerro Campana; eventDate: 08-24-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/165; sex: Female; catalogNumber: BMNHE1722046; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Colombia, Costa Rica, Panama, Peru

Notes: Valid species in Warileya.

sallesi Galvão & Coutinho, 1939

Nomenclature:

Flebotomus sallesi Galvão & Coutinho, 1939 (Galvão and Coutinho 1939)

Material

Paratype:

a. scientificName: Evandromyia (Barrettomyia) sallesi (Galvão & Coutinho, 1939); country:
Brazil; stateProvince: São Paulo; municipality: Araçatuba; year: 1935; eventRemarks: https://phlebotominaenhmtypes.myspecies.info/node/188; sex: Female; catalogNumber:
BMNHE1722069; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Argentina, Bolivia, Brazil, Ecuador, Paraguay, Peru

Notes: Valid species in Evandromyia (Barrettomyia).

scorzai Ortiz, 1965

Nomenclature:

Phlebotomus scorzai Ortiz, 1965 (Ortíz 1965)

Material

Paratype:

a. scientificName: Lutzomyia (Helcocyrtomyia) scorzai (Ortiz, 1965); country: Venezuela; locality: Rancho Grande; year: 1965; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/191; sex: Male; catalogNumber: BMNHE1722072; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Peru, Venezuela

Notes: Valid species in *Lutzomyia* (*Helcocyrtomyia*).

shawi Fraiha, Ward & Ready, 1981

Nomenclature:

Lutzomyia shawi Fraiha, Ward & Ready, 1981 (Fraiha et al. 1981)

Materials

Paratypes:

- a. scientificName: Nyssomyia shawi (Fraiha, Ward & Ready, 1981); country: Brazil; stateProvince: Pará; municipality: Marabá; locality: Serra dos Carajás; year: 1975; month: 2; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/88; sex: Male; catalogNumber: BMNHE1251316; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Nyssomyia shawi (Fraiha, Ward & Ready, 1981); country: Brazil; stateProvince: Pará; municipality: Marabá; locality: Serra dos Carajás; eventDate: 09-22-74; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/89; sex: Female; catalogNumber: BMNHE1251317; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Nyssomyia shawi* (Fraiha, Ward & Ready, 1981); country: Brazil; stateProvince: Pará; municipality: Marabá; locality: Serra dos Carajás; year: 1975; month: 2; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/180; sex: Male;

- catalogNumber: BMNHE1722061; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Nyssomyia shawi (Fraiha, Ward & Ready, 1981); country: Brazil; stateProvince: Pará; municipality: Marabá; locality: Serra dos Carajás; eventDate: 09-23-74; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/181; sex: Female; catalogNumber: BMNHE1722062; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Nyssomyia shawi* (Fraiha, Ward & Ready, 1981); country: Brazil; stateProvince: Pará; municipality: Marabá; locality: Serra dos Carajás; eventDate: 09-23-74; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/184; sex: Female; catalogNumber: BMNHE1722065; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Peru

Notes: Valid species in Nyssomyia.

spinicrassa Morales, Osorno-Mesa, Osorno & Hoyos, 1969

Nomenclature:

Lutzomyia spinicrassa Morales, Osorno-Mesa, Osorno & Hoyos, 1969 (Morales et al. 1969)

Materials

Paratypes:

- a. scientificName: Pintomyia (Pifanomyia) spinicrassa (Morales, Osorno-Mesa, Osorno & Hoyos, 1969); country: Colombia; stateProvince: Boyacá; locality: Guayatá Chitavita; eventDate: 08-09-68; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/213; sex: Female; catalogNumber: BMNHE1722094; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Pintomyia (Pifanomyia) spinicrassa (Morales, Osorno-Mesa, Osorno & Hoyos, 1969); country: Colombia; stateProvince: Boyacá; locality: Guayatá Chitavita; eventDate: 08-09-68; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/214; sex: Male; catalogNumber: BMNHE1722095; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Pintomyia (Pifanomyia) spinicrassa (Morales, Osorno-Mesa, Osorno & Hoyos, 1969); country: Colombia; stateProvince: Boyacá; locality: Guayatá Chitavita; eventDate: 08-09-68; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/250; sex: Female; catalogNumber: BMNHE1722131; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Pintomyia (Pifanomyia) spinicrassa (Morales, Osorno-Mesa, Osorno & Hoyos, 1969); country: Colombia; stateProvince: Boyacá; locality: Guayatá Chitavita; eventDate: 08-09-68; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/251; sex: Female; catalogNumber: BMNHE1722132; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Venezuela

Notes: Valid species in *Pintomyia* (*Pifanomyia*).

strictivilla Young, 1979

Nomenclature:

Lutzomyia strictivilla Young, 1979 (Young 1979)

Material

Paratype:

a. scientificName: Lutzomyia (Helcocyrtomyia) strictivilla Young, 1979; country: Colombia; stateProvince: Antioquia; municipality: Zaragoza; locality: 24km SW of Zaragoza at Rio Anori; eventDate: 04-14-71; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/128; sex: Male; catalogNumber: BMNHE1722009; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Ecuador, Venezuela

Notes: Valid species in Lutzomyia (Helcocyrtomyia).

trapidoi Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus trapidoi Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Materials

Paratypes:

- a. scientificName: Nyssomyia trapidoi (Fairchild & Hertig, 1952); country: Panama; stateProvince: Bocas del Toro; locality: Almirante, Finca Nievecita; eventDate: 06-21-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/86; sex: Male; catalogNumber: BMNHE1251314; institutionCode: NHMUK
- scientificName: Nyssomyia trapidoi (Fairchild & Hertig, 1952); country: Panama;
 stateProvince: Bocas del Toro; locality: Almirante; eventDate: 22/07/50; eventRemarks: https://phlebotominaenhmtypes.myspecies.info/node/179; catalogNumber: BMNHE1722060; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Colombia, Costa Rica, Ecuador, Guatemala, Hounduras, Nicaragua, Panama

Notes: Valid species in Nyssomyia.

trinidadensis Newstead, 1922

Nomenclature:

Phlebotomus trinidadensis Newstead, 1922 (Newstead 1922)

Materials

Syntypes:

a. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://

- <u>phlebotominaenhmtypes.myspecies.info/node/118</u>; sex: Male; catalogNumber: BMNHE1721999; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/119; sex: Female; catalogNumber: BMNHE1722000; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/120; sex: Female; catalogNumber: BMNHE1722001; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Micropygomyia (Sauromyia) trinidadensis (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/121; sex: Male; catalogNumber: BMNHE1722002; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/122; sex: Male; catalogNumber: BMNHE1722003; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- f. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/123; sex: Female; catalogNumber: BMNHE1722004; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- g. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/124; sex: Female; catalogNumber: BMNHE1722005; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- h. scientificName: *Micropygomyia* (*Sauromyia*) *trinidadensis* (Newstead, 1922); country: Trinidad and Tabago; eventDate: 01-07-22; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/125; sex: Female; catalogNumber: BMNHE1722006; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, French Guiana, Guatemala, Honduras, Mexico, Nicaragua, Peru, Panama, Surinam, Trinidad and Tobago, Venezuela

Notes: Valid species in *Micropygomyia* (*Sauromyia*).

triramula Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus triramulus Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Materials

Paratypes:

a. scientificName: *Trichopygomyia triramula* (Fairchild & Hertig, 1952); country: Panama; stateProvince: Panamá; locality: Cerro Jefe, La Victoria; eventDate: 08-29-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/205; sex: Female; catalogNumber: BMNHE1722086; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

scientificName: *Trichopygomyia triramula* (Fairchild & Hertig, 1952); country: Panama; stateProvince: Colón; locality: Palenque; eventDate: 09-15-49; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/206; sex: Male; catalogNumber: BMNHE1722087; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Panama

Notes: Valid species in Trichopygomyia.

ubiquitalis Mangabeira, 1942

Nomenclature:

Flebotomus ubiquitalis Mangabeira, 1942 (Mangabeira 1942)

Materials

Syntypes:

- a. scientificName: Trichophoromyia ubiquitalis (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aura; eventDate: 10-08-40; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/203; sex: Male; catalogNumber: BMNHE1722084; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: *Trichophoromyia ubiquitalis* (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aura; eventDate: 10-08-40; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/204; sex: Male; catalogNumber: BMNHE1722085; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: *Trichophoromyia ubiquitalis* (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aura; eventDate: 10-08-40; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/245; sex: Male; catalogNumber: BMNHE1722126; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: *Trichophoromyia ubiquitalis* (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aura; eventDate: 10-08-40; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/246; sex: Male; catalogNumber: BMNHE1722127; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: *Trichophoromyia ubiquitalis* (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aura; eventDate: 10-08-40; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/247; sex: Male; catalogNumber: BMNHE1722128; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- f. scientificName: *Trichophoromyia ubiquitalis* (Mangabeira, 1942); country: Brazil; stateProvince: Pará; municipality: Belém; locality: Aura; eventDate: 10-08-40; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/259; sex: Male; catalogNumber: BMNHE1722140; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Ecuador, French Guiana, Peru, Surinam, Venezuela

Notes: Valid species in *Trichophoromyia*.

umbratilis Ward & Fraiha, 1977

Nomenclature:

Lutzomyia umbratilis Ward & Fraiha, 1977 (Ward and Fraiha 1977)

Materials

Paratypes:

- a. scientificName: Nyssomyia umbratilis (Ward & Fraiha, 1977); country: Brazil; stateProvince: Pará; locality: Rio Jari, Monte Dourado; eventDate: 06/02/76; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/177; sex: Female; catalogNumber: BMNHE1722058; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Nyssomyia umbratilis (Ward & Fraiha, 1977); country: Brazil; stateProvince: Pará; locality: Rio Jari, Monte Dourado; eventDate: 12/11/76; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/178; sex: Female; catalogNumber: BMNHE1722059; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, French Guiana, Peru, Surinam, Venezuela

Notes: Valid species in Nyssomyia.

vexillarius Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus vexillarius Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Material

Paratype:

a. scientificName: Lutzomyia (Lutzomyia) vexillarius (Fairchild & Hertig, 1952); acceptedNameUsage: Lutzomyia (Lutzomyia) lichyi (Floch & Abonnenc, 1950); country: Panama; stateProvince: Panamá; locality: Serrania majé, Cerro Chucanti; eventDate: 03-05-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/146; sex: Male; catalogNumber: BMNHE1722027; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Brazil, Colombia, Costa Rica, Ecuador, French Guiana, Panama, Peru, Trinidad and Tobago, Venezuela

Notes: Synonym of *Lutzomyia* (*Lutzomyia*) *lichyi* (Floch & Abonnenc, 1950) Floch and Abonnenc 1950. Synonymised by Floch and Kramer 1965.

viriosa Fairchild & Hertig, 1958

Nomenclature:

Phlebotomus viriosa Fairchild & Hertig, 1958 (Fairchild and Hertig 1958a)

Materials

Paratypes:

- a. scientificName: Dampfomyia (Coromyia) viriosa (Fairchild & Hertig, 1958); country: Panama; stateProvince: Bocas del Toro; locality: near camp No.1, Almirante; eventDate: 05-17-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/139; sex: Female; catalogNumber: BMNHE1722020; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- b. scientificName: Dampfomyia (Coromyia) viriosa (Fairchild & Hertig, 1958); country: Panama; stateProvince: Bocas del Toro; locality: Almirante; eventDate: 03-24-52; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/140; sex: Male; catalogNumber: BMNHE1722021; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Dampfomyia (Coromyia) viriosa (Fairchild & Hertig, 1958); country: Panama; stateProvince: Bocas del Toro; locality: Almirante; eventDate: 09-17-52; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/141; sex: Female; catalogNumber: BMNHE1722022; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Dampfomyia (Coromyia) viriosa (Fairchild & Hertig, 1958); country: Panama; stateProvince: Bocas del Toro; locality: near camp No.1, Almirante; eventDate: 05-17-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/142; sex: Male; catalogNumber: BMNHE1722023; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: Dampfomyia (Coromyia) viriosa (Fairchild & Hertig, 1958); country: Panama; stateProvince: Bocas del Toro; locality: Almirante; eventDate: 09-09-52; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/143; sex: Female; catalogNumber: BMNHE1722024; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- f. scientificName: Dampfomyia (Coromyia) viriosa (Fairchild & Hertig, 1958); country:
 Panama; stateProvince: Bocas del Toro; locality: near camp No.1, Almirante; eventDate:
 05-17-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/144; sex:
 Male; catalogNumber: BMNHE1722025; institutionCode: NHMUK; basisOfRecord:
 Preserved Specimen

Distribution: Costa Rica, Panama

Notes: Valid species in *Dampfomyia* (*Coromyia*).

walkeri Newstead, 1914

Nomenclature:

Phlebotomus walkeri Newstead 1914 (Newstead 1914)

Phlebotomus gasti Sherlock, 1962

Materials

Lectotype:

a. scientificName: *Evandromyia* (*Aldamyia*) *walkeri* (Newstead, 1914); locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/218; sex: Male; catalogNumber: BMNHE1722099; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Paralectotypes:

- a. scientificName: *Evandromyia* (*Aldamyia*) *walkeri* (Newstead, 1914); locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/219; sex: Male; catalogNumber: BMNHE1722100; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Evandromyia (Aldamyia) walkeri (Newstead, 1914); locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/220; sex: Female; catalogNumber: BMNHE1722101; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- c. scientificName: Evandromyia (Aldamyia) walkeri (Newstead, 1914); locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/221; sex: Female; catalogNumber: BMNHE1722102; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- d. scientificName: Evandromyia (Aldamyia) walkeri (Newstead, 1914); country: Brazil; stateProvince: State of Rondonia; locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/252; sex: Male; catalogNumber: BMNHE1722133; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- e. scientificName: Evandromyia (Aldamyia) walkeri (Newstead, 1914); country: Brazil; stateProvince: State of Rondonia; locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/254; sex: Male; catalogNumber: BMNHE1722135; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- f. scientificName: Evandromyia (Aldamyia) walkeri (Newstead, 1914); country: Brazil; stateProvince: State of Rondonia; locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/255; sex: Male; catalogNumber: BMNHE1722136; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- g. scientificName: Evandromyia (Aldamyia) walkeri (Newstead, 1914); country: Brazil; stateProvince: State of Rondonia; locality: Rio Abuna, Brazil/Boliva border; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/256; sex: Male; catalogNumber: BMNHE1722137; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Ecuador, French Guiana, Panama, Peru, Trinidad and Tobago, Venezuela

Notes: Valid species in *Evandromyia* (*Aldamyia*). Lectotype designated by Lewis 1967b.

xerophila Young, Brener & Wargo, 1983

Nomenclature:

Lutzomyia xerophila Young, Brener & Wargo, 1983 (Young et al. 1983)

Material

Paratype:

a. scientificName: Pintomyia xerophila (Young, Brener & Wargo, 1983); country: USA; stateProvince: California; municipality: Riverside; locality: Cahuilla Hills, Palm desert; eventDate: 09-16-81; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/224; sex: Female; catalogNumber: BMNHE1722105; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: United States of America

Notes: Valid species in *Pintomyia (incertae sedis)*.

ylephiletor Fairchild & Hertig, 1952

Nomenclature:

Phlebotomus ylephiletor Fairchild & Hertig, 1952 (Fairchild and Hertig 1952)

Materials

Paratypes:

- a. scientificName: Nyssomyia ylephiletor (Fairchild & Hertig, 1952); country: Panama; stateProvince: Bocas del Toro; locality: Almirante, Finca Nievecita; eventDate: 06-22-50; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/87; sex: Male; catalogNumber: BMNHE1251315; institutionCode: NHMUK; basisOfRecord: Preserved Specimen
- scientificName: Nyssomyia ylephiletor (Fairchild & Hertig, 1952); country: Panama;
 stateProvince: Bocas del Toro; locality: Almirante; eventDate: 06-29-51; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/90; sex: Female; catalogNumber:
 BMNHE1251318; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Belize, Colombia, Costa Rica, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Panama

Notes: Valid species in *Nyssomyia*.

yuilli Young & Porter, 1972

Nomenclature:

Lutzomyia yuilli Young & Porter, 1972 (Young and Porter 1972)

Materials

Paratypes:

a. scientificName: Nyssomyia yuilli (Young & Porter, 1972); country: Colombia; stateProvince: Antioquia; municipality: Zaragoza; locality: 24km S & 21 km W of Zaragoza; eventDate: 23/05/70; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/175; sex: Male; catalogNumber: BMNHE1722056; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

scientificName: Nyssomyia yuilli (Young & Porter, 1972); country: Colombia; stateProvince: Antioquia; municipality: Zaragoza; locality: 24km S & 21 km W of Zaragoza; eventDate: 12/09/70; eventRemarks: http://phlebotominaenhmtypes.myspecies.info/node/176; sex: Female; catalogNumber: BMNHE1722057; institutionCode: NHMUK; basisOfRecord: Preserved Specimen

Distribution: Bolivia, Brazil, Colombia, Ecuador, Peru, Venezuela

Notes: Valid species in Nyssomyia.

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Author contributions

PHFS: inspected type material, imaged specimens and assisted in manuscript writing. ZJOA: compiled data, created website, verified records and wrote manuscript.

References

- Abonnenc E, Chassignet R (1948) Phlébotomes de la Guyane française. XXIII.
 Description d'une espèce nouvelle: *Phlebotomus flochi*. Institut Pasteur de la Guyane et du Territoire de l'Inini, Cayenne. Publications. No. 167.
- Adler S, Theodor O (1926) On the minutus group of the genus *Phlebotomus* in Palestine. Bulletin of Entomological Research, (London) 16: 399-405. https://doi.org/10.1017/S000748530002873X
- Artemiev MM (1991) A classification of the subfamily Phlebotominae. Parassitologia 33 (Supplement 1): 69-77.
- Blancas F (1959) Notas sobre flebótomos Peruanos. Enumeración de las especies de flebótomos encontrados en el Perú y descripción de una especie nueva, *Phlebotomus gorbitzi* n. sp. (Diptera, Psychodidae). Revista de Medicina Experimental 13.

- Christensen HA, Rutledge LC (1973) Two new synonyms in the genus *Lutzomyia* (Diptera: Psychodidae). Journal of Medical Entomology 10: 314. https://doi.org/10.1093/jmedent/10.3.314
- Damasceno RG, Arouck R (1956) Estudos sôbre Flebotomus no Vale Amazônico. Parte VIII. Descrição de F. pinottii, F. scaffi e F. nevesi (Diptera, Psychodidae). SPVEA Sector de Coordenação e Divulgação, Belem (Para) (Brazil).
- Fairchild GB, Hertig M (1948) Notes on the *Phlebotomus* of Panama (Diptera, Psychodidae). IV. *P. atroclavatus* Knab, *P. cayennensis* Floch and Abonnenc, *P. chiapanensis* Dampf and some related forms from the West Indies and Mexico. Annals of the Entomological Society of America 41: 455-467. https://doi.org/10.1093/aesa/41.4.455
- Fairchild GB, Trapido H (1950) The West Indian species of *Phlebotomus* (Diptera, Psychodidae). Annals of the Entomological Society of America 43: 405-417. https://doi.org/10.1093/aesa/43.3.405
- Fairchild GB, Hertig M (1951a) Notes on the *Phlebotomus* of Panama (Diptera, Psychodidae). VII. The subgenus Shannonomyia Pratt. Annals of the Entomological Society of America 44 (3): 399-421. https://doi.org/10.1093/aesa/44.3.399
- Fairchild GB, Hertig M (1951b) Notes on the *Phlebotomus* of Panama (Diptera, Psychodidae). VIII. Two new species of *Warileya*. Annals of the Entomological Society of America 44 (3): 422-429. https://doi.org/10.1093/aesa/44.3.422
- Fairchild GB, Hertig M (1952) Notes on the *Phlebotomus* of Panama. IX. Descriptions of seven new species. Annals of the Entomological Society of America 45 (4): 505-528.
 https://doi.org/10.1093/aesa/45.4.505
- Fairchild GB, Hertig M (1956) Notes on the *Phlebotomus* of Panama (Diptera, Psychodidae). XII. The group anthophorus with descriptions of four new species from Panama and Mexico. Annals of the Entomological Society of America 49 (4): 307-312. https://doi.org/10.1093/aesa/49.4.307
- Fairchild GB, Hertig M (1957) Notes on the *Phlebotomus* of Panama. XIII. The vexator group, with descriptions of new species from Panamá and California. Annals of the Entomological Society of America 50 (4): 325-334. https://doi.org/10.1093/aesa/50.4.325
- Fairchild GB, Hertig M (1958a) Notes on the *Phlebotomus* of Panama. XIV. (Diptera, Psychodidae). *P. vespertilionis* and related species. Annals of the Entomological Society of America 51 (6): 509-516. https://doi.org/10.1093/aesa/51.6.509
- Fairchild GB, Hertig M (1958b) Notes on the *Phlebotomus* of Panama XV. Four apparently new synonymies (Diptera: Psychodidae). Proceedings of the Entomological Society of Washington 60: 203-205.
- Fairchild GB, Hertig M (1961) Notes on the *Phlebotomus* of Panama. XVI. (Diptera, Psychodidae). Descriptions of new and little-known species from Panama and Central America. Annals of the Entomological Society of America 54 (2): 237-255. https://doi.org/10.1093/aesa/54.2.237
- Feliciangeli MD, Ordoñez R, Fernandez E (1984a) Lutzomyia lewisi, a new phlebotomine sandfly (Diptera, Psychodidae) from Cojedes State, Venezuela. Memórias do Instituto Oswaldo Cruz (Rio de Janeiro) 79 (3): 357-361. https://doi.org/10.1590/S0074-02761984000300009

- Feliciangeli MD, Ordoñez R, Manzanilla P (1984b) Lutzomyia aulari, a new phlebotomine sandfly (Diptera, Psychodidae) from Trujillo State, Venezuela. Journal of Medical Entomology 21 (5): 592-596. https://doi.org/10.1093/jmedent/21.5.592
- Floch H, Abonnenc E (1950) Phlébotomes du Vénézuela. III. Description d'une espèce nouvelle: *Phlebotomus lichyi*. Institut Pasteur de la Guyane et du Territoire de l'Inini, Cayenne. Publications.
- Floch H, Kramer R (1965) Phlébotomes du Vénézuéla. IV. Phlebotomus vexillarius
 Fairchild & Hertig, 1952 et P. foliatus Mirsa & Ortiz, 1953 synonymes de P. lichyi Floch &
 Abonnenc, 1950. Institut Pasteur de la Guyane et du Territoire de l'Inini, Cayenne. 496:
 1-8.
- Fraiha H, Ward RD (1974) A new species of *Psychodopygus* Mangabeira (Diptera, Phlebotominae) from the Transamazônica highway, Para State, Brazil. Bulletin of Entomological Research, (London) 64: 209-212. https://doi.org/10.1017/S0007485300031096
- Fraiha H, Ward RD, Ready PD (1981) Flebótomineos Brasileiros. V. Lutzomyia (Nyssomyia) shawi n. sp., nova espécie antropófila de flebótomo da Amazônia (Diptera, Psychodidae). Revista Brasileira de Biologia, (Rio de Janeiro) 41 (4): 699-703.
- Galati EAB (1995) Phylogenetic systematics of Phlebotominae (Diptera, Psychodidae) with emphasis on American groups. Boletin de la Direccion de Malariologia y Saneamiento Ambiental 35 (Suplemento 1): 133-142.
- Galati EAB (2003a) Morfologia e taxonomia: classificação de Phlebotominae (Diptera: Psychodidae). In: Rangel EF, Lainson R (Eds) Flebotomíneos do Brasil. Fiocruz, Rio de Janeiro, Brasil, 28 pp.
- Galati EAB (2003b) Morfologia, terminologia de adultos e identificacao dos taxons da America. In: Rangel EF, Lainson R (Eds) Flebotomíneos do Brasil. Fiocruz, Rio de Janeiro, Brasil, 122 pp.
- Galvão ALA, Coutinho JO (1939) Contribuição ao estudo dos Flebotomus do Estado de São Paulo. Flebotomus sallesi, n. sp. (Diptera, Psychodidae). Anais da Faculdade de medicina da Universidade de São Paulo 15: 125-139.
- Hertig M (1948) A new genus of bloodsucking Psychodids from Perú (Diptera, Psychodidae). Annals of the Entomological Society of America 41 (1): 8-16. https://doi.org/10.1093/aesa/41.1.8
- Larrousse F (1920) Nouvelle espèce américaine du genre *Phlebotomus*, *Phlebotomus* brumpti, sp. nov. Bulletin de la Société de Pathologie Exotique 12: 659-662.
- Lewis DJ (1967a) Phlebotomine sandflies from Cayman Brac Island (Diptera: Psychodidae). Journal of Natural History 2: 73-83. https://doi.org/10.1080/00222936800770631
- Lewis DJ (1967b) Redescriptions of two South American sand-flies (Diptera: Psychodidae). Proceedings of the Royal Entomological Society of London (B) 36: 131-136.
- Lewis DJ, Young DG, Faurchild GB, Minter DM (1977) Proposals for a stable classifications of the phlebotomine sand flies (Diptera: Psychodidae). Systematic Entomology 2: 319-332. https://doi.org/10.1111/j.1365-3113.1977.tb00381.x
- Mangabeira F (1942) 7ª Contribuição ao estudo dos Flebotomus. Descrição dos machos de 24 novas espécies (Diptera, Psychodidae). Memórias do Instituto Oswaldo Cruz, (Rio de Janeiro) 37 (2): 111-218. https://doi.org/10.1590/50074-02761942000200003

- Morales A, Osorno-Mesa EA, Osorno Fd, Muñoz de Hoyos P (1969) Phlebotominae de Colombia (Diptera, Psychodidae). V. Descripción de una nueva especie de *Lutzomyia*. Revista de la Academia colombiana de ciencias exactas, físicas y naturales 13 (51): 383-390.
- Newstead R (1914) Notes on *Phlebotomus* with descriptions of new species. Part II.
 Bulletin of Entomological Research, (London) 5 (2): 179-192. https://doi.org/10.1017/S0007485300034040
- Newstead R (1922) A new species of *Phlebotomus* from Trinidad. Annals of Tropical Medicine and Parasitology 16 (1): 47-50. https://doi.org/10.1080/00034983.1922.11684297
- Nuñez-Tovar M (1924) Flebótomos de Venezuela. Litografia y Tipografia del Comercio,
 Caracas (Venezuela) Segunda Parte: 1-46.
- Ogusuku E, Perez JE, Davies CR, Villaseca P (1996) Description of Warileya lumbrerasi n. sp. (Diptera:Psychodidae) from Peru. Memórias do Instituto Oswaldo Cruz, (Rio de Janeiro) 91 (6): 711-716. https://doi.org/10.1590/S0074-02761996000600010
- Ogusuku E, Canales JJ, Pérez JE (1997) Descripción de Lutzomyia gonzaloi n. sp. y de L. monzonensis n. sp. (Diptera: Psychodidae: Phlebotominae) y dos nuevos registros de Phlebotominae para el Perú. Revista Peruana de Entomologia 40: 71-78.
- Ortíz I (1965) Contribución al estudio de los flebótomos americanos del grupo sanguinarius con la descripción de una nueva especie: *Phlebotomus scorzai* n. sp. (Diptera, Psychodidae). Acta Biologica Venezuelica 5 (2): 25-39.
- Osorno Fd, Osorno-Mesa EA, Morales A (1972) Phlebotominae de Colombia (Diptera, Psychodidae). VII. Descripción de *Lutzomyia andina* sp. n. y *Lutzomyia quasitownsendi* sp. n. Boletim do Museu de História Natural da Universidade Federal de Minas Gerais 12: 1-29.
- Rangel EF, Lainson R (2009) Proven and putative vectors of American cutaneous leishmaniasis in Brazil: aspects of their biology and vectorial competence. Memórias do Instituto Oswaldo Cruz 104: 937-954. https://doi.org/10.1590/
 S0074-02762009000700001
- Ready PD, Fraiha H (1981) Brazilian phlebotomines. VI. *Lutzomyia richardwardi* sp. n., a new species of Nyssomyia from Amazônia with keys for this subgenus (Diptera, Psychodidae). Revista Brasileira de Biologia, (Rio de Janeiro) 41 (4): 705-712.
- Rodríguez MJD (1950) Los *Phlebotomus* del Ecuador (Diptera, Psychodidae). I.
 Consideraciones generales. Descripción de una nueva especie. Revista ecuatoriana de higiene y medicina tropical 7 (3): 20-29.
- Rozeboom LE (1942) *Phlebotomus anduzei*, a new *Phlebotomus* from Venezuela. Boletín de Entomologia Venezolana 1 (4): 91-94.
- Shannon RC (1929) Entomological investigations in connection with Carrion's disease. American Journal of Tropical Medicine and Hygiene 10 (1): 78-111.
- Sherlock I (1962) Sôbre alguns *Phlebotomus* e *Brumptomyia* da Colômbia (Diptera: Psychodidae). Memórias do Instituto Oswaldo Cruz, (Rio de Janeiro) 60: 321-336.
 https://doi.org/10.1590/S0074-02761962000300004
- Shimabukuro PHF, de Andrade AJ, Galati EAB (2017) Checklist of American sand flies (Diptera, Psychodidae, Phlebotominae): genera, species, and their distribution.
 ZooKeys 660 (67-106): . https://doi.org/10.3897/zookeys.660.10508

- Summers SLM (1912) A new species of *Phlebotomus* from South America. Bulletin of Entomological Research, (London) 37 (2): 209-210. https://doi.org/10.1017/ S0007485300001826
- Theodor O (1932) On the structure of the buccal cavity, pharynx and spermateca in South American *Phlebotomus*. Bulletin of Entomological Research, (London) 23: 17-23. https://doi.org/10.1017/S0007485300002522
- Townsend BC, Lane RP (1990) Phlebotominae. In: Townsend BC (Ed.) A catalogue of the types of bloodsucking flies. British Museum (Natural History), 18 pp. [ISBN 0 565 011227].
- Vargas L, Díaz Nájera A (1953) Nuevas especies de flebotomos de México. Revista del Instituto de salubridad y enfermedades tropicales 13 (1): 41-52.
- Vargas L, Díaz Nájera A (1959) Phlebotomus farilli n. sp., Ph. humboldti n. sp. y Ph. olmecus n. sp. de Mexico (Diptera: Psychodidae). Revista del Instituto de salubridad y enfermedades tropicales 19: 141-153.
- Ward RD, Fraiha H (1977) Lutzomyia umbratilis, a new species of sandfly from Brazil (Diptera, Psychodidae). Journal of Medical Entomology 14 (3): 313-317. https://doi.org/10.1093/jmedent/14.3.313
- Young DG, Porter CH (1972) Lutzomyia yuilli, a new man-biting phlebotomine sand fly from Colombia (Diptera: Psychodidae). Journal of Medical Entomology 9 (6): 524-526. https://doi.org/10.1093/jmedent/9.6.524
- Young DG, Arias JR (1977) Lutzomyia sandflies in the subgenus Evandromyia
 Mangabeira with descriptions of a new species from Brazil (Diptera, Psychodidae). Acta
 Amazonica 7 (1): 59-70. https://doi.org/10.1590/1809-43921977071059
- Young DG (1979) A review of the bloodsucking psychodid flies of Colombia (Diptera, Phlebotominae and Sycoracinae). Bulletin (Technical) of the Agricultural Experiment Stations, University of Florida. 806: 1-266.
- Young DG, Arias JR (1982) A new phlebotomine sand fly in the Lutzomyia flaviscutellata complex (Diptera: Psychodidae) from Northern Brazil. Journal of Medical Entomology 19: 134-138. https://doi.org/10.1093/jmedent/19.2.134
- Young DG, Brenner RJ, Wargo MJ (1983) A new phlebotomine sandfly (Diptera, Psychodidae) from Southern California, USA. Journal of Medical Entomology 20: 313-315. https://doi.org/10.1093/jmedent/20.3.313
- Young DG, Pérez JE, Romero G (1985) New records of phlebotomine sandflies from Peru with a description of *Lutzomyia oligodonta* n. sp. from the Rimac Valley (Diptera: Psychodidae). International Journal of Entomology, (Honolulu) 27 (1): 136-146.
- Young DG, Duncan MA (1994) Guide to the identification and geographic distribution of *Lutzomyia* sand flies in Mexico, the West Indies, Central and South America. Associated Publishers, American Entomological Institute, Gainesville, 864 pp.
- Zapata S, León R, Sauvage F, Augot D, Trueba G, Cruaud C, Couloux A, Terán R, Depaquita J (2012) Morphometric and molecular characterization of the series *Guyanensis* (Diptera, Psychodidae, Psychodopygus) from the Ecuadorian Amazon Basin with description of a new species. Infection, Genetics and Evolution 12 (5): 966-977. https://doi.org/10.1016/j.meegid.2012.02.006